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extremely erratic in their behavior. It would appear that the problem is not one of cultivation or fertilization and the cause and remedy must be sought in an entirely different direction.

While it is a fact, well known to botanists, that plants of the genus *Diospyros* are dioecious (occasionally polymorphous or monœcious), yet the question of sex as related to the non-fruiting of the Japan persimmon, *D. Kaki*, appears to have been entirely overlooked. Examination, both macroscopical and microscopical, of hundreds of flowers of different varieties shows that the stamens in the pistillate flowers are abortive and no pollen is borne in them. Without question, herein lies the reason for Japan persimmons so often setting no fruit, or only a very light crop—an abundant supply of pollen at the proper time is lacking and the only source of pollen for the Japan persimmon is the chance supply furnished by staminate trees of *D. Virginiana*. So far as the records show, no male trees of *D. Kaki* have been brought to this country. A change in orchard practise is needed, and as in the culture of Smyrna figs or dates, carob bean and pistache nut, the planting of male trees to supply pollen is a necessity, so in orchards of Japan or other persimmons, the presence of male persimmon trees, covering the blooming period, is necessary to secure an abundant setting of fruit. To this there are doubtless exceptions, as some varieties (Tane-Nashi, for instance) are almost invariably seedless and apparently set and mature fruit without being pollinated. Seedlessness is in many cases due to environment and is not an inherent character in fruits. It is often due simply to lack of pollen.

It is possible that some specimens of *D. Kaki* in this country do produce pollen-bearing flowers, but such trees are extremely rare, and in ten years of observation, but one such tree, a monœcious specimen of Tabers No. 23 has been noted. So infrequently do such occur, it may not be too much to say that all Japan persimmon seedlings originated in this country have a strain of some other persimmon (usually *D. Virginiana*) in them.

The problems connected with this matter are being carefully investigated.

H. HAROLD HUME

GLEN SAINT MARY, FLORIDA,

May 10, 1909

#### SCIENTIFIC BOOKS

*The Rise and Progress of the British Explosives Industry.* Published under the auspices of the Seventh International Congress of Applied Chemistry by its Explosives Section. Small quarto; pp. 418; 39 illustrations. New York, Whittaker and Co. 1909.

This is the first fruit of the congress held in London, May 28 to June 2, 1909, which was attended by some 3,000 members. This book originated in a suggestion made to the Committee of the Explosives Section, which has financed the project, on December 5, 1908, and it is the product of the joint efforts of a large number of collaborators, most of whom are intimately connected with the special branches of the industry of which they treat, under the supervision of Mr. E. A. Brayley Hodgetts, editor. The contents are classified into an Historical Part, treating of gunpowder, nitrocellulose, nitroglycerine and its derivatives, permitted explosives, percussion caps, Bickford's safety fuse, fireworks, legislation, bibliography, chronology and list of gunpowder makers; and a Descriptive Part, treating of the three existing government establishments and some fifty-four private establishments.

The bibliography and chronology fill some 132 pages, while there are, in addition, considerable lists of papers and patents attached to some of the special articles, and these are quite useful, but the special articles, as might be expected from so large a number of contributors, and especially where so many of them are engaged in other than literary or scientific pursuits, exhibit a marked unevenness in the method of treatment and the quality of the product. This lack of system is especially to be noted in the part devoted to private establishments where the accounts vary from a two-line notice of one establishment to a ten-page description of another.

In fact, a large part of the text could have

been omitted without serious loss, yet the research student must examine it in detail, since there occurs from time to time statements such as "This 'heat test,' as it was called, invented and perfected by the late Dr. Dupré, chemical adviser to the home office, is in universal use to-day: it is a test for the purity of guncotton, nitroglycerine and freshly made explosives, and the home office has so far found nothing to supersede it," for from 1896, at least, when P. Gerald Sanford published his "Nitro-Explosives" in London, to 1909, when Dr. H. Kast published his "Anleitung zur chemischen und physikalischen Untersuchung der Spreng- und Zündstoffe" in Brunswick, this stability test has been almost universally styled the Abel heat test, and in view of such governmental publications as that issued from Woolwich, under date of February 11, 1874, it has seemed proper to do so, but of course we must recognize the primary right of the English people to determine questions of priority between their own investigators. They should, however, also resolve the conflicting claims to invention and ownership of modern explosives set forth in these pages by the representatives of private establishments.

As indicated above, the book is a disappointing one and most so in the matter of statistics, for while the rise of an industry in its various phases may be set forth chronologically, the progress is to be measured quantitatively, and yet one searches these pages in vain for the quantities of the explosives of various kinds produced at different periods. It is true that the report of the Nobel's Explosives Company, Limited, shows that, starting in 1871 with a capital of £24,000, it accumulated reserves which were capitalized in 1900 at £800,000, in addition to which debentures to the value of £500,000 were issued, and that, by 1909, it owned nine factories, the chief one known as the Ardeer Factory, occupying 837 acres, containing 1,004 buildings, and employing 2,300 foremen and laborers, together with 35 chemists. Had the editor arranged a system of reporting whereby the other establishments made returns of items similar to these just cited, some measure of progress would have been presented.

In one regard the book is a surprise, for claims to preeminence are set forth in it in no uncertain tones and it may be read with comfort by Americans who are restive under foreign criticism. In fact, in many regards, the book suggests those which may be found in hotels and on routes of travel frequented by commercial travelers.

CHARLES E. MUNROE

*Phrenology or the Doctrine of the Mental Phenomena.* By J. G. SPURZHEIM. Revised edition from the second American edition, published in Boston, 1833. With an introduction by CYRUS ELDER. Philadelphia and London, J. B. Lippincott and Company. 1908.

This is a reprint, without change in the text, except the omission of Spurzheim's reflections upon the moral and religious constitution of man, his voluminous Latin notes and a controversy with George Combe, of the antiquated "phrenology" which sought to define the intellectual and affective powers of the mind, be they perceptive or reflective, propensities or sentiments, in terms of parts that can be distinguished by the external configuration of the head. A frontispiece shows the familiar charts of the head in three views, setting forth with great thoroughness the location of each and all of the powers of the mind. Fourteen plates show portraits of men, bull-dogs and horses, with "readings" of the various "organs" indicating *destructiveness, Amativeness, philoprogenitiveness, inhabitiveness, benevolence, ideality* and so on.

Phrenology has had its day, of even shorter duration than alchemy or astrology, alike empiric and mystic, though it can not be denied that Gall and Spurzheim, particularly the former, did much to prepare the foundation for the rising superstructure of proved facts regarding the brain and mind. Even modern attempts to revert to phrenology and phrenologic methods in localizing the passions and emotions—that is, the subtle moral qualities as distinguished from the intellect—such as the pretentious work of Bernard Holländer have failed signally to convince.